MSFC ISO PRE-ASSESSMENT AUDIT SCRIBE NOTES - Oct 97'

THIS AUDITOR'S MAIN FOCUS WAS ON ISO ELEMENTS: *

7 - CONTROL OF CUSTOMER SUPPLIED PRODUCT
8 - PRODUCT IDENTIFICATION AND TRACEABILITY
9 - PROCESS CONTROL
13 - CONTROL OF NONCONFORMING PRODUCTS
15 - HANDLING, STROAGE, PACKAGING, PRESERVATION AND DELIVERY
20 - STATISTICAL TECHNIQUES

*** Other generic issues were discussed as appropriate during the audit, (i.e., quality records, training, Quality Policy, etc.)**

Date: October 21, 1997 - A.M.
Auditor: Auditor #2

Organization Audited:
CN41, Property Management Division, Bldg. 4471

Questions/Answers
(**N=**NQA Auditor/**A**=Auditee)

N: I would like an overview of 4.7 & 4.15 to define your role as in or out-of-scope
A: My organization has a monitoring role - our contractor is total hands-on; however, we do follow the procedures, such as using labels to denote customer supplied product

N: What kind of customer supplied products do you receive?
A: Could be anything, including flight hardware. Predetermined by the Projects;Receiving checks for damage and determines routing based on paperwork

N: Is the Marshall Lead Representative (MLR) the most responsible person?
A: Yes

N: Do you have a list of MLRs?
A: No. It varies from time-to-time

N: Does the MLR responsibility spread to the Projects?
A: Yes. Leads are designated; could even be a Project Manager

N: Does the paperwork (accompanying a shipment) give a POC?
A: It should; the burden is on the organization that prepares the initial paperwork.

N: Some part of your process/operation is contract review agreement?
A: Yes

N: Does the SEMO keep an inventory of the products received?
A: The “system” captures most of it; could be “due-in”, therefore, we would have a schedule.

N: Where would I go to actually see your operation?
A: Building 4723 for Flight/Quality Sensitive hardware or Building 4471.

N: When was your operation implemented?
A: October. We’re changing contracts; have gone to performance based contracting and we’re in the first week of transition with the new contractor.

N: Who is the new contractor?
A: SCSC

N: We need to go to a program office and review the MLR process.
A: Absolutely

N: What is SEMO’s role in the case of damage?
A: Depends on the type of product; various reports must be done.

N: I’m sure you know the MSFC Quality Policy.
A: (Auditee read from badge. Touched on excellence, quality, safety, & importance, but did not actually cite the policy)

N: What is your process doing for MSFC?
A: Provides consistency.

N: What organizational goals are you bringing to the Center?
A: New flight hardware system; traceability

N: How does 4.15 apply to you?
A: We have a role; but functions are changing based on our new contract.

N: Is there anyone you want us to see relative to your operation?
A: It’s all done by a Support Contractor.

N: Most of your role is oversight?
A: Yes.

N: Does your organization get involved with the review of procedures?
A: Yes.

N: What would be in Stores Stock?
A: Low cost, recurring products such as paper, small components, disks, etc.

N: Are your operations handled by Center or Subcontractor, or a mixture?
A: Subcontractor.

N: Do you keep inventory records?

A: Yes. Put in appropriate database record.

N: What is MM 4000.1?
A: Center Property Manual. It's being revised.

N: Most of your process is contractor operated to their procedures?
A: Yes

N: When you do a survey, do you keep records?
A: Yes. Under the new system, all observations will be filed.

N: If and when I come back, you could provide objective evidence that you performed the necessary reviews?
A: Yes.

N: Are any of your folks involved with explosives or nuclear handling?
A: No. None are qualified.

N: Your only role then really is to survey compliance?
A: Yes.

N: Subcontractor procedures would have to be in compliance with MM 4000.1?
A: Yes. SOPs are being revised now.

Date: October 21, 1997 - P.M.
Auditor: Auditor #2

N NQA Auditor
A Auditee

MSFC-P07.1 Control of Customer Supplied Product
Location: Bldg. 4674 A: EP52

N Have you used these tags (Customer Supplied Product Tag)?
A No.

N Do you have paperwork to go with customer supplied product?
A Yes. (Produces Inventory Management Plan for Atlas II AR.)

N What documentation is used when you receive customer supplied product?
A Comes to point of contact. Meet at receiving and do rough count. Then Lockheed Martin does inventory by piece part.
We then go to inventory and pick up parts as required.

N Do they give inventory report?

A I haven't asked for one. It's between them and Denver.

N What if product is damaged?
A Discrepancy report against part is written.
Ex: Sensor probe to long. QTPS written. It's up to Lockheed Martin to fix. QTPS must be answered before part can be used.

N Can you call up MSFC-P13.1?
A Yes. (Called up on computer.)

N Does tech notify you (of nonconformance)?
A They normally have Quality with them and then notify lead engineer.

N Are you purchasing product?
A No. Lockheed Martin owns and we are testing.

N Do you have intention of incorporating Tags (Customer Supplied Product Tag)?
A No. Contract doesn't require. Tags are cumbersome in many instances in test.

N How do you supply special instructions (handling instructions to receiving)?
A Use our procedures to handle special instructions such as large items that receiving can't handle.

N How timely do you notify customer of damaged product?
A 24 hours. (Not sure of document where this is found.)

N I don't know if MSFC-P13.1 adequately handles customer supplied product.
A This is how I see handling customer supplied product. (Pointing to flowchart in P13.1.)

N Disposition could be notify customer.

N What if product is damaged during test?
A If it didn't work, but didn't damage anything, the process is the same QTPS. If there is damage, it's a different game all together and I'm out of that loop.

N Does Inventory Management Plan specify records to keep and retention times?
A This is only part of the paperwork. Not sure if that's in here. It should be in the Atlas Quality Plan. We keep test data for 5 years. That is specified somewhere. Found to be 3 years from Atlas Quality Plan.

N Can you find Quality Record for the sensor probe mentioned earlier?
A Pulled up on computer. (Found QTPS)

N (MSFC-P07.1 step 4.7) Memorandum for record will include time and date customer notified. Verbal notification within 24 hours and written notification within 10 working days.
A Will e-mail work?

N Yes. I can accept many things except verbals.

N Must have times noted to back up your requirement to notify customer within 24 hours.

N Can you tell me the Quality Policy?
A Deliver quality products and services.

N Do you have a Marshall management representative?
A Bob Schwinghamer.

MSFC-P15.1-C02 Storage, Issue, and Disposal
Location: Bldg. 4723 A: MSI contractor

N Do you work to your own procedures to be compliant?
A Yes. (Lists some of his procedures and pulls out notebook with his procedures inside.)

N Not auditing you to your procedures. Verifying that you have them to back up MSFC procedures. What MSFC procedures require of you.

N Do you reference MSFC documents?
A Yes. (Showed location in his document(s).)

N Do you have a procedure for disposal?
A No. (Another contractor for disposal.)

N Do you handle explosives or radioactive materials?
A No. Only commercially available items.

N What type Quality Records do you keep?
A Purchase Requisition. Certificate of Compliance.

N Do you have a document to specify Quality Records to be kept?
A No.

N How long do you keep Quality Records?
A Length of contract or until part is used up. Some records are past along to next contractor.

N Can you show me your storage area?
A Yes.

N What about shelf life items?
A They will be segregated (not yet transitioned).

Date: October 22, 1997 - A.M.
Auditor: Auditor #2

CR

N: Tell me about product traceability activities at the Center.
A: When a procurement goes out, we review:
release desk reviews
block of numbers
release drawing
quality plans
When it is received:
Goes to QA
IR Tag placed on it
Tag goes with the product (shows form)
Goes to Store
Each time something is done to the hardware, it is noted on the form and signed off
Can be modified by a work order, or the Labs use test preparation sheets

(TPS)

N: Do all products have an IR tag?
A: It depends on whether it is flight hardware or payloads. All have IR tags. Class C and D (payloads) can be limited. Quality items are tracked and controlled by QA to assure compliance. Class A requires a tag for every piece of hardware that goes in the system. Class B is like Class A, but we don't have for FEMA seals and such.

N: Who defined these classes?
A: Classes were defined in NHB 8010, which is now canceled. Plans now define configuration.

N: You are just working on what?
A: I don't have an example to show you. We tried to see how it was done in the past.

N: Where are records kept? IR? PIN? Traceability?
A: At this point in time, we don't have a place. CR30 has a records center. The Project will have to define what is a quality record is they don't want to use CR30.

N: You don't have anybody who has started a project under this system?
A: No, sir.

N: If I go to a manufacturing area, I could see an IR?
A: Yes.

N: Any certification annotated on the work sheet?
A: No, not unless testing components - electrical, not mechanical. Go to EB

Lab to see lot date codes. EH builds mechanical.

N: So EB and EH would be good places to go?
A: Yes.

N: So it really starts at the Project?
A: Yes. The team has PDR, Quality, Safety, Reliability, Design, manufacturing and the chief engineers. They make a decisions as a group. Part numbers go to the Release Desk for number assignments.

N: Are you familiar with PO8.1?
A: Yes, sir. It defines how it goes through the system - traceability.

N: Table code, request initiation - this appears to be more of an accounting system.
A: Yes, like for fasteners. You have to have something else to tell you the properties of the fastener. 8.1 can track dollars.

N: May not be a good reference? 8.1 not in book. OWI not referenced.
A: Product ID - describes how in OWI.
Traceability - distinguish between lot number and ….
Applicable guides - level of traceability defined.
Address EEE parts.
We tended to use what we had in place and created a document that described what systems were needed to track or trace hardware from build to final shipment.

N: Keep in mind that this is a pre-assessment. You are free to ask any questions you have.
A: What advice do you have to improve documents?
N: There are a lot of organizations with unique approaches to this process. Establish a foundation all should comply to even though they may vary slightly in their own documentation. Have unique identification number. Lot number, serial number should be identified under testing. If manufacturing, put heat lot number to provide tie back when received.

A: Is it more cumbersome to have two systems?
N: No right or wrong way, but keep it simple or people will do divergent things and not meet common goals.

N: This doesn't talk about IR tag in here. I don't see a lot about work orders or TPS. How would you weave that in here?
A: Here under manufacturing organizations. 9.1 should get you into work orders or TPS.

N: Class levels (A, B, C, D) were once in place, but now are deleted. Do project plans define classes?
A: Define traceability requirements and roles QA, etc. will play. Project defines what are requirements. Is traceability a real requirement? Everyone has to get together and define it. (We had a document 5312

years ago. The Team (to write the instructions) used that document as a guide. It was broken up into three different parts in the present instructions.)

N: Document everything on a work order - lot code, batch number, heat lot. You aren't far from the mark with what you are doing. Now you put it back up at the Project level, defined in the project plan.
A: Project decides where they want to put emphasis. Record retention has a cost to it, and that has to be considered.)

N: Block of numbers - where do you get them?
A: Release Desk.

N: Where is that defined in PO8.1?
A: EB Lab asked us to update and explain that more thoroughly.

N:	Management Rep?	A:	Schwinghamer
	Number of ISO elements?		20
	What Standard?		9001
	Why is unique?		Design element

<u>EB</u>

N: So parts control plan meets the requirement of both traceability and identification of parts. Output of design. Do you get a block of numbers from the Release Desk?
A: Yes.

N: Saw example of lot number, date code, part number. Inspections are tagged in this area?
A: No. We receive a copy, but original is retained by Quality.

N: Need to go to area where I could see?
A: Electrical shop - EH51.

N: See copies of Inspection /Acceptance Certification Log?
A: (Shows log for SXI.) Screening prior to arrival at MSFC.

(Comment by ?????: Grade B parts can be upgraded to B+ in our labs here. Keeps the cost down.)

N: Do you have a process in place to do a periodic evaluation of components received?
A: DPAs on components taken on a sample basis for flight components as part of the parts control plan. We can use our contractor to purchase and test parts.

N: Do you have an example of a log for a spaceflight part?

A: (Shows file.) Inspection & Acceptance Reports have similar paperwork.

Tells whether spaceflight or non-spaceflight.

N: Is part of your job to go through records and make sure they are complete?
A: Looking for buyoffs; receipt matches order; manufacturing spec number corresponds to request.

N: You have a computer file that summarizes lots and dates?
A: Ask for as-build parts list at the end of the project. You can see these in the EH shop.

EH

N: Product ID and traceability. Looking for records that would tie it together. Where are the records that lay it all out?
A: Some are resident with the contractor. Data record goes to NASA Quality Records Center. We retain the fabrication request - manufacturing request - contractor delivery record retained here. The actual data package that tracks the process is in the work record. Detailed records are maintained by the contractor, ASRI.

N: What is fabricated in this building?
A: R&D type; flight hardware; Advanced Rendezvous and Capture; Solar X-Ray support hardware. All hands-on manufacturing by the contractor working to their own procedures.

N: Does the contractor have procedures?
A: The contractor will have all Level 1 and 2 documents in a month. November 17 is due date for OWIs. They will be in place by MSFC's audit. (Note: the contract began October 1 and is in transition.)

N: If submit documents to you, then someone in your area is responsible for seeing they comply with MSFC instructions?
A: Yes. (Lists names of people.)

N: You'll have a record they have approved? Who keeps it?
A: Quality, EH Lab, Procurement. We will sign off and approve.

N: We will look to confirm this when we come back. You are still responsible to see their internal documents are in compliance with your documents. What are you going to review them for or to? Your NASA requirements?
A: I'm not sure.

N: Whatever the contractor does has to satisfy your CWIs. MSFC Program defines what needs to be done, and the contractor's work instructions must not violate MSFC procedures.
A: We may be doing things differently, but they don't contradict instructions in NASA level 1 and 2.

N: I won't audit the contractors procedures, but I will look at the output to assure it meets program requirements. I'll be looking at what is objective evidence that you have looked at the contractors instructions. If the contractor works to MSFC procedures, then they are in scope! They have to have their own procedures that are in compliance with MSFC's requirements.

EH - review of IRs

N: Let me see if I understand the process of IR….
A: Can start at Receiving.

N: Where does it list the lot number?
A: (Shows on form.)

N: This is a 3M poly sealant?
A: Yes.

N: I guess this explains the lot number? (points)
A: Yes.

N: Is this one of your own documents here?
A: Yes. MSDS sheet. All is kept in the data package and filed by year. Parts are files separately.

N: So this is all for just tubes of this? (Hefts thick package)
A: Yes.

N: If I understand this code correctly, this was made in December 96 in France.
A: Yes.

N: So some things you can get back?
A: Yes, like spare parts sent to JSC that come back in. Those are logged in the data base too.

N: Does DCSS need to be involved. If so, who?
A: ?????.

N: How does this work? Is it certified by Quality Rep?
A: Yes.

N: Certificate of Compliance.
A: Memos they send out on items are kept and filed with that (points to notebook).

N: If anything came up about Form 203A1, would there be an as-built list that calls out the number?
A: What they write down is the IR tag number.

N: They are all unique then?
A: Yes.

N: The work order spells everything out?
A: The IR tag number is unique.

N: This connects to this? (Points.)
A: Yes. This is the or-equal list. It has the first list when I input this in the data base, it will call up the next level assembly. I check to make sure it is complete. I throw it away when I'm through.

N: I guess it's somewhere in the system anyway?
A: I print out an as-built list as compared to an as-designed list and compare them.

N: We can go to Bills of Material and all IRs are underneath it. Do you have work instructions?
A: Yes, let me get my binder.

N: (Points to OWI) - this is what tells you to put together CR30-14?
A: It tells that I keep it in a data base.

N: Process of putting these together - is this the manufacturing orders?
A: S&MA used to fill these out, but it's been turned over ASRI (contractor).

N: This isn't really a manufacturing order, is it?
A: No.

Date: October 22, 1997 - P.M.
Auditor: Auditor #2
?????: sanitized, replaced an individual's name

EH31
EH33 Nonmetallic Materials Processes

ISO Element 9 Process Control

N: How many elements in ISO
A: 20

N: Explain Composites how you Manage them, control requirements, control process
A: We are not your normal composites group, more R&D
Showed OWI to Auditor
Division picks individual to lead task, approved by lab
Then working from flow chart (in OWI), the task lead decides how to tailor documentation, along with comment from customer. Will maintain documentation

keep copy of quality records, compile docs. And give copies of each to customer.

N: So when this OWI is completed it will tell everyone what to do?
A: Along with specifics from customer.

N: Who is the process owner?
A: ????? (a process engineer)

N: OWI is output of this process?
A: yes

N: Who is the supervisor?
A: Me

N: You identified process and process owner?
A: Yes

N: Who is responsible to review this process is done?
A: Those in authority over me

N: In section 4.3 Supervisors Review Process
What do you plan to measure?
A: Monitor from beginning to end schedule, make sure that the customer is satisfied.

N: What records will you keep?
Any definitions on monitor?
A: Not in OWI now

N: ????? reviews the Master List, records etc. per section 4.4
What activities, is he going to be looking at inspection results?
A: Yes, he will inspect each layer that becomes a quality record along with customer, current data

N: All records of the process?
A: yes

N: Are there routers?
A: Yes *Pointed them out in OWI*

N: Do you have existing fiber placement?
A: Yes for this particular tasks

N: Do you have any equipment lists?
A: Yes

N: In which appendix?
A: Under Applicable Docs and Processing Guidlines

N: I see appendix A has traceability

N: I see materials identified, definition of needs, monitor control requirements, requirement docs. , criteria for workmanship

N: What will you require on maintenance?
A: Listed in Contract agreement

N: Training for operator?
A: Will be written in contract agreement

N: Have you defined requirements for qualified individuals
A: No Contractor tell us their qualification requirements

N: How do you define (individuals) qualifications?
A: Individuals must be qualified *Tells how*

N: OWI does not have requirements for qualifications
A: No

N: In 18.1 Training I'm interested in what kind of guidelines OWI has for training qualifications
A: For a contractor it will be in the SOW
For in-house work they will be engineers

N: Does NASA have standards for qualification of technicians
How do you give direction in area of qualified to contractor
A: Spelled out in contract. *Showed list given by a contractor on how they qualify*

N: Does 18.1 spell out training qualifications, how does NASA in-house determine qualified engineers?
A: Degree engineers, hands-on training, PIP

N: Do you expect this from technicians
A: Yes

A: COTR, contracting officer will give list to contractor on qualifications

N: Anything in OWI on how individuals are trained
A: No states need for qualified individuals

N: In this procedure where are you spelling out qualification guidelines for individuals

N: I understand it is in draft, BUT WHEN I COME BACK

Going through list 4.5 in 9 Process Control

c. Make reference to existing MSFC spec.
d. your O.K.
e. goes with suitable equipment definition

*f. Will be looking for OE of
g. Have not fully done, Needs verification
h. Want some statements on maintenance
Need training requirements defined !!!!!

Records of all this stuff **must be** maintained
Need Objective Evidence

Don't be in draft in February

OWI needs approval as well as revisions

Objective Evidence needed to show that reviews as defined in 4.9 has occurred or example of its attempt. Show records, equipment list, final docs.

At the management level show objective evidence of reviews and management responsibility

Show test records and work orders

Toured Composite Facility

* Unmaintained chart on freezer

Summary

1- Will be looking for objective evidence next time
2- Watch handing off to much responsibility to contractor on training requirements
3- Note chart on freezer
4- Overall a good job, process is in place

Date: October 22, 1997 - A.M.
Auditor: Auditor #2
?????: sanitized, replaced an individual's name

Org. Code: HEI/CR01 Bldg.: 4203

N: Give me an overview of statistical techniques at this site.
A: When someone does an analysis they completely document the data and select the appropriate statistical technique.

N: Give me some examples of statistical techniques.
A: Aggression Analysis, Regression, Reliability Growth Models, Design of Experiments. Summary: Mean, maximum and minimum of data, plots, and

distribution fitting

N: Who's responsible for determining the need for statistical techniques?
A: Functional Managers, Chief Engineers, Project Managers. For example, if the lab director knows that the lab will conduct a test that needs statistical techniques, an expert in the lab will be used. S&MA will be contacted if no one in the lab has the expertise.

N: In what would the results be documented? How do the managers, CEs, or PMs, document the need? Where is the need for statistical techniques communicated?
A: May be incorporated in test plan. A lot of times problems occur in the field. Someone higher up makes the decision. Statistics play a role in decision-making.

N: Are these summarized in reports?
A: Yes. All data will be documented. The reports talk about the technique selected, performance of the technique and documents the results of the technique. Charts are made and presented to teams.

N: Have you included sampling?
A: Yes, 105, 414 (mil standards).

N: Are these included in the list of techniques?
A: Yes.

N: Have you included these on the list for statistical techniques?
A: Yes. S&MA is the contact for this. S&MA have people capable of conducting the techniques.

N: Do they have procedures that they (the working level) use to document a sample plan?
A: Like a sample plan. Yes.

N: How would you document the need and communicate to subcontractors?
A: In the organization if no one is familiar enough with mil standards, they could contact S&MA for assistance. ????? is the expert usually contacted.

N: Does the center have a procedure that when a subcontractor is given work that they need to have a sampling plan?
A: I don't know unless that was in a contract.

N: What does the center require? Does it accurately implement the aspects of this element?
A: Future contracts will require ISO compliance. Specifically, I can't answer.

N: Let's talk about training. When I talked about statistical techniques, you named a number of techniques. Do you provide any requirements for training? Do you provide ways to assure employees are capable?
A: I don't think we have an OWI for design of experiments. S&MA may provide training.

N: The people responsible for defining the training needs are chief engineers and functional managers.
A: They have experience or people in their group with experience through college work or other training courses. We could provide oversight in the design of experiments or consult.

N: Let's go through your procedure (MSFC-P20.1; hereafter referred to as MSP).
A: Auditee provided hardcopy of MSP.

N: From Section 3.3 of the MSP, would you be considered the statistical technique user?
A: Yes. We don't have all the experts. Personnel in the labs may be able to perform the techniques. The chief engineer could be the user. We do not have the title, statistical technique specialist, at MSFC.

N: From Section 4.1 of the MSP, what is CE?
A: Chief Engineer

N: Do you keep a database that can be drawn upon that lists who are trained or qualified to perform statistical techniques?
A: The project office has an engineer with statistics training, and they utilize him.

N: You're in CR01?
A: Yes, we're a contractor to S&MA.

N: Is everyone in your group a statistical specialist?
A: We have a R&M group. Yes, at HEI we have people identified and support S&MA.

N: Who would have the database of experts?
A: ?????. She would first go to ?????.

N: This works well for one of the windows, data analysis. One of the weaknesses of this MSP is application for contractors. How do you implement or make sure contractors implement this requirement? This doesn't bring in responsibility of quality. Do you see a weakness? They wouldn't see the need to apply or need to use statistical techniques on a day to day basis.

N: How would procurement know to include this requirement in the contract? Where would procurement find this requirement? The minimum requirements should be in this MSP. This would be an avenue for functional application. How would the contractor know of this requirement?
A: That would be determined in the contract

N: Who would communicate the statistical technique needs?
A: The teams formed in procurement for writing the contract.

N: Would this document (MSP) provide guidelines or techniques?
A: In the aerospace industry, we don't have a big "How," so sometimes we do 100% sampling. Do we have people that could develop a sampling plan? Yes.

N: Let's say that you have the need for this technique. Would you write in the contract that someone would need to use statistical techniques?
A: Yes, in the contract.

N: What Marshall Center instruction would you go to that would set the guidelines? This MSP should set the tone. What you think is ISO compliant may not be the same as the contractor. You have written the MSP that states "How"?
A: Correct. Can you write a document that lists all the techniques?

N: That's not what I'm saying. It can contain be written that contains functional applications. There are two things the standard talks about. First, the need must be identified. The MSP is not written to explain product characteristics.
A: We have this contract with Thiokol. I'm sure this is specified in their contract.

N: Flowdown to contracts is not included in the MSP. Contract specialist would think the MSP is for engineers. The scope of the MSP doesn't draw relationship to product characteristics. The MSP is weak in that the flowdown to those responsible for product characteristics is not

identified.

A: The scope would have to state the implementation of requirements.

N: Those responsible for product characteristics need to understand the need for inclusion in contracts. The way MSFC does business has changed over the years. The scope of the MSP needs to change to incorporate management of contractors. The second thing the standard talks about is product characteristics implementation. Is there anything in the MSP that states OWIs should be written?

A: No.

N: How is that part of the standard going to be implemented? The MSP doesn't provide for that. That's why I asked," Do you have a procedure or development of sampling plan or design of experiments?".

A: If you feel uneasy regarding statistical techniques, you might call ?????.

N: What about a contractor?

A: An offsite.

N: You don't have much control over offsite contractors. All you can do is ask them to show that they have done this (statistical techniques).

A: I think all of our contractors know this.

N: Let's talk about onsite contractors. Let's go back to writing product characteristics and procedures. At what point do you think quality could be compromised? That's when you write a procedure. You may not want to go to the point to have them do a chart of the process. The procedure may state the requirements.

A: Thiokol receives materials from other vendors and assemble the final product. We should have something in place to require/discuss sampling?

N: If you think it's important. Where do you identify need? Who would be responsible for this? You've identified the CE and PM. How is the need communicated to the contract's people?

A: I think the PM, who is responsible for hardware and contract, would make sure they are documented contract-wise. This may be in the project plan.

N: If looking at project plan, does the MSP indicate that this needs to be included in project plan?

A: The PM or CE would identify the need.

N: When requirements are given to contractor, the contractor supplies plans to meet requirement to Marshall Management.

A: We could lay everything out for the contractor.

N: Getting back to the MSP, let's think about the applicability in the scope. How to make the scope's applicability work. We need identified in the MSP that procedures must exist on implementation. Whatever OWIs written must meet the MSP and complement it. Just like the standard requires Marshall's MSPs to complement it.

A: If you wanted to say something specific the OWI would cover that?

N: How would you control the implementation/application? Identification of STU, training.

A: Right, submitting reports. Reports could be reviewed here; would this meet the requirement?

N: Is that required now? Do you think it is needed? Do you provide oversight?

A: Yes, when we're asked.

N: This ISO system is a value added tool. Don't make the scope of the MSP too narrow. Scope should apply to all areas of MSFC (purchasing, procurement).

A: It would have a technical bias because I am on the engineering side. The intent is not to exclude.

N: This a totally independent review of the document. You fill in the gap because you know what's on the other side. I point these out not to be critical but I don't see the connect.

ESCORT: No way for someone to know how it applies to him.

N: We'll be looking for objective evidence. When we come back, we want to see the objective evidence that this has been incorporated. Show me a reliability report.

A: Auditee produced TIR# CR70-16502-R01-003. The report addressed change in torque for a particular project. The report included objective, database, statistical analysis, printout of analysis and conclusion.

N: Who is the report sent to?

A: My Marshall person. My secretary can provide a copy of the report.

N: You're going to work on the scope. Personnel performing this should be qualified. New techniques require some training. Procedure didn't indicate the How. Don't forget to embrace product characteristics and application for need of procedures. This is part of the standard. OWIs need structure on how to meet the needs. Next time I expect to see a

resource matrix. I would go to application groups and ask who are your specialists, and I would expect to see a resource matrix in that area as well.

A: What about the guy who's been there 14 or 15 years. I think these people have been identified.

ESCORT: I think the lab directors know who the experts are in their area.

N: What happens when that person goes away? Sometimes the people retire and there's a black hole and there isn't anything to draw from. This process gets away from keeping things in their heads. They know where to go when someone is not there. Things like this happen all the time.

A: We have to show our support of our customers with a report.

New Person

N: What is the quality policy?

A: To provide quality products and services.

N: To whom?

A: Our customers.

N: What standard is MSFC trying to get certified to?

A: ISO 9000

N: Which one of the ISO 9000 documents are MSFC trying to get registered to?

A: The first one.

N: By first, do you mean ISO 9001?

A: All I know is ISO 9000.

Conclusion of audit.

Date: October 23, 1997 -P.M.
Auditor: Auditor #2
Auditee: (A1, A2, & A3)
?????: sanitized, replaced an individual's name

Bldg.: MSFC 4705
Subject: MSFC Handling of Non-Conforming Material

NQA - How is Non-Conforming handled at MSFC? He would like to go to the Document Center and the crib where non-conforming material.

A1 - There is no MSFC crib for non-conforming material.

Team travels to Building 4705 By taxi around 1:20 PM. Team visits the office of ?????/CR32 (A2) and remains there the rest of the audit.

ES - Building 4705 is described as the MSFC Machine Shop.

NQA - Explains that he is there to investigate MSFC handling of non-conforming material.

A3 - ????? arrives

A1 - Explains that A3 works primarily on electrical parts/materials.

NQA - Ask if this area looks at Discrepancy Reports (DR) generated through manufacturing floor problems or materials coming into shipping/receiving.

A1 - Mentions that DRs also come from the testing area.

A1 - Inspection requirements are provided by Program Management for the dispositioning of non-conforming material.

A1 - Non-conforming material can be accepted or rejected by the Program Contracting Officer of the Program procuring the material.

A1 - Systems Test discrepancies generated on end item hardware failures during testing.

A1 - MSFC Quality Assurance has responsibility after manufacturing or receipt of hardware.

A1 - The Bldg. 4705 manufacturing contractor (Native American Services - NAS) performs the primary QA function on the manufacturing floor. MSFC QA provides a monitoring function for NAS.

A1 - Most discrepancies today are on materials coming into receiving or from the test area.

NQA - At the point a NCR is generated, will it need to go to a Material Review Board (MRB)?

A1 - A list of Department of Defense (DOD) 100 criteria for configuration management.

A1 - Issues must be handled by the program contracting officer.

A1 - MRB would have to be dispositioned by the program engineer who is responsible and the issue would result in minor repairer where Class 1 requirements will not be changed

NQA - What responsibility does MSFC QA have in the Material Review Board?

A1 - There are 2 chairpersons for the MRB. Those individuals are ???? and ???? and they need to concur with program management team. The MRB team is made of stress engineering, 2 material engineering types, a design engineer, and a manufacturing engineer.

A1 - The lead designer will participate in the MRB.

NQA - MRB will be required only for other than Class 1 hardware and will require a disposition by Deviation or Waiver.

A1 - Reworkable items are not a problem.

NQA - Something found to be a non-conformance but is Reworkable.

A1 - Hardware can be reworked.

NQA - Class 1 hardware will go for a deviation or waiver. Hardware that is not Class 1 will go for repair or use as is.

NQA - Do you keep records of DRs?

NQA - Could I see an example of DRs for Class 1 or Non-Class 1 hardware?

A1 - Can note in part interchangeability form.

NQA - Is flight hardware consider Class 1?

A1 - MSFC QA does not normally get involved in non-qual sensitive hardware.

NQA - Would like to look at DRs that have been through a MRB.

A1 - A2 was asked to pull some waivers for a DR.

NQA - Wants to look at rework or repair process on DRs.

NQA - DR waiver being examined had insulation smashed on a part. Question asked on how the damage happened.

A1 - Indicated that MSFC does not have a high volume of DRs.

NQA - Questioned who generated the rational contained in the DR.

A3 - ????? or ????? from EB lab provided subject rational in the DR.

A1 - Response is indicated is listed in block 25 of the DR form.

NQA - Questions DR safety hazard block and when it is filled out?

A3 - Block 25 is filled out when applicable.

NQA - Who decides if DRs are Class 1 problems.

A1 - Class 1 decisions are made between NASA QA and the design engineer.

NQA - Does procedure list who is responsible for MSFCP13.1-C01?

A1 - Procedure does not state who has responsibility.

NQA - DR dispositioned for recurrence? Does the rework block get filled out by the MRB?

A3 - If the DR is going to MRB, it will be dispositioned by responsible engineer.

NQA - A small point on DR requires MRB only once has anyone checked block on materials review.

NQA - Another DR was reviewed. There are examples of center wide Class 1 requests. There is no place on the DR to indicate if Class 1. Not sure who has right to disposition.

A1 - Lead will have to agree with NASA QA if not will elevate to NASA management.

A1 - Block 34 and 36 indicate MSFC QA bought the disposition. Here is 13.1 Class 1 criterion.

A1 - Chapter 6 where they say who can disposition the DR. The program manager has ultimate responsibility. MSFC QA will go to the program manger to disposition the DR when there is a disagreement. This situation has never happened.

NQA - When you make a find, does it require a waiver? Why did you check Block 33 Use As Is (Final Disposition).

NQA - If MRB is involve, the final acceptance stamp is a QA stamp by the chairman of the MRB. Define who has authority to determine Class1? Explain what does DAR Block 7 mean (deviation or waiver)?

NQA - What about project MRB action vs. center-wide.

A1 - Determined by project level. One project opted for their own MRB. LDA is only project with their own MRB. Dispositioned by NASA personnel QA engineering, stress (defined by the project).

NQA - Do you have an electronic form?

A1 - No electronic form.

NQA - Reason for question, on Tuesday while reviewing customer supplied product, all products are received in inventory. At some point, hardware in test was described as non-conforming. Since problem involves a customer, would you use an electronic form?

A1 - Atlas engine testing DRs are not stored.

NQA - How was DR process described. Attempt to call NASA QA and ask them how it is described. Do you use Drs?

NQA - Asked about Organizational Work Instructions (OWI) for handling customer supplied product.

A2 - Eventually all DRs will flow through her office for filing/storage. There is talk about going to electronic forms.

A1 - Atlas engine testing is a test area NC that was supplied by customer but not a test item. It was a test supplier. If a flight item would be documented by NASA. Atlas is a Lockheed Martin hardware and they want information on their forms.

NQA - Is there a list of Science and Engineering (S&E) personnel for signature authority (paragraph 4.2.2.A).

A1 - List of persons is provided by the programs of S&E personnel to serve on MRB boards. NASA QA could not find an example of the list. Nobody has asked for it in the last 10 months.

NQA - Let's talk about recent hardware that was found to be non-conformant.

A1 - Document on inspection request.

NQA - Does contacts use their own DR. Dow we document how hardware handled.

A1 - We are looking to see if we can accept hardware.

NQA - Do you copies of documents with anything in Block F? If disposition was to return to vendor, where is that documented?

A1 - Contracting officer will note on the form.

A3 - Indicated that she has a list of 1997 rejects.

NQA - I contract officer makes a disposition, where does the hardware go at point of rejection?

A1 - Reject form and hardware picked up by property management.

A3 - They may disposition to keep/rework hardware and will repair after block F is filled out.

NQA - Who fills out the form?

NQA - If hardware is rejected goes to contacting officer via property management.

A1 - Government does not accept bad hardware.

NQA - Is the rejection process described anywhere?

A1 - Described in Chapter 13.1

NQA - Does anyone ever analyze for trends or constant problems?

A1 - Say Printed Wiring Board (PWB) and I will know and request controlling office that have vendor responsibility. QA is provided a copy of discrepancies.

NQA - All systems and subsystems?

A1 - Break Down
- Parts we buy
- Designed and purchased parts
- Raw data
- Fasteners
- all parts in a box

A1 - Most box level work is contracted out.

NQA - EB55 is an Optics group?

NQA - Do people performing this activity not work to procedures? They work to their own procedures.

NQA - Marked to reflect revisions. How do you mark rejected hardware?

A3 - Marked on the I & AR and DR are cross referenced.

NQA - When you have DR documentation for supplier? When these are generated? How do repeated DRs get analyzed (cost factor)? How does information get back into a reporting mechanism?

A1 - Depending on contractor, QA engineer on that contract has direct input on award fee. This is reserved for large outside sources. On purchase order agreements (Build to Print). BOA QA systems are acceptable. If there are problems, we interface directly with vendor QA.

NQA - Where is BOA qual problems dispositioned?

A1 - Not sure where they are dispositioned.

NQA - The link may not be established? Does 13.1 have anything that suggests a review of the DR program to identify a problem.

A1 - Screening problems for recurrence control. Similar to the system on the shuttle. System is not good for in-house work. System in CR10 is still in its infancy.

NQA - Were you working with a matrix and not sue of what record 1048? NASA team showed NQA the information he requested.

A1 - May not be an issue - record must be pulled (may be non-qual sensitive). If non-qual sensitive, it will never be seen by NASA QA.

NQA - I looked at I&NR and never saw dispositioned by contracting officer. In the 10 or so I&NR there was no record of disposition of contracting officer.

A1 - Go see if procurement to see if file exists.

NQA - If contracting officer accepts non-conforming hardware then where is the record?

A1 - Parts will not come back if rejected unless reworked or repaired.

NQA - What did ????? see in recurrence control?

A1 - Suspect ????? saw I&NR because the items were not qual sensitive.

NQA - Design organization is responsible. Return to vendor, scrap, rework, may not require MRB.

NQA - What are the changes in procedure from the beginning use of the DR form?

A1 - Basically the same except Project MRB added.

NQA - Does MSP tell who receives copy of DR?

A1 - Yes, covered in MSP. * - searching for recurrence control in 13.

NQA - Closing Remarks and return to bldg 4203.